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(71) Applicant *(for all designated States except US)*: **IMI VISION LIMITED** [GB/GB]; Tything Road, Alcester, Warwickshire B49 6EU (GB).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **NIGHY, Richard, John** [GB/GB]; 78 Wetherby Way, Stratford on Avon CV37 9LU (GB). **HUNTER, John** [GB/US]; 12444 Pointe Circle, Rogers, MN 55374 (US). **BRAMLEY, Hugh, Christopher** [GB/GB]; 13 Barn House Mews, London Green, Rugely, Staffordshire WS15 4QA (GB).

(74) Agent: **BARKER BRETTELL**; 138 Hagley Road, Edgbaston, Birmingham B16 9PW (GB).

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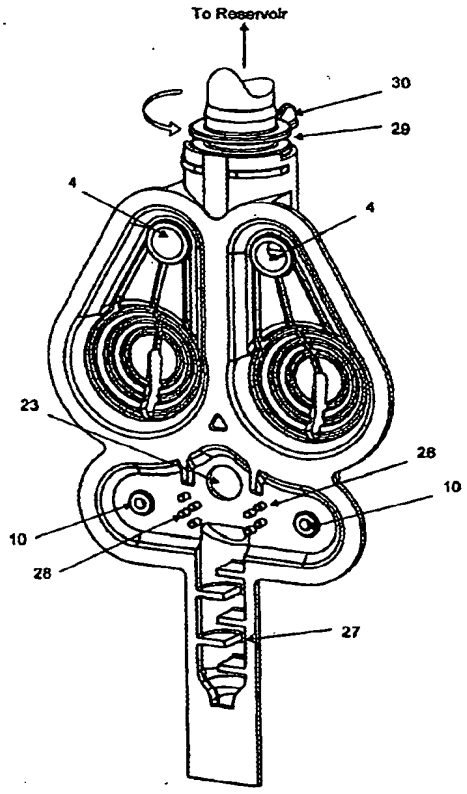
(54) Title: FLUID METERING WITH A DISPOSABLE MEMBRANE TYPE PUMP UNIT



(57) Abstract: A disposable pump unit (100) for receiving and metering a predetermined volume of fluid has a body with a surface at which opens the mouth of a cavity (7) formed in the body. An inlet port (4) for the fluid opens at the surface adjacent to the mouth of the cavity (7) and a plurality of outlets (9) are provided in the cavity (7) that open to a fluid flow passageway extending through the body and connecting the cavity (7) to an outlet port (10). A flexible membrane (8) overlies the cavity (7), the inlet port (4) and the outlet port (10) and is sealingly secured at its periphery to the surface. A re-usatile pump actuating unit (200) is co-operable with the pump unit (100) to position the membrane (8) between the cavity (7) in the pump unit (100) and a matching cavity (21) in the actuating unit (200). The membrane (8) is towards and away from the cavity (7) by connecting the cavity (21) to a source of positive and negative fluid pressure via a port (18). The actuating unit (200) has an armature (19) operable to displace the membrane (8) to close the inlet port (4) when the outlet port (10) is open and an armature (20) operable to displace the membrane (8) to close the outlet port (10) when the inlet port (4) is open. In use, the pump unit (100) draws fluid into the cavity (7) when the inlet port (4) is open and a negative fluid pressure is applied to the chamber (21) and pumps the fluid out of the cavity (7), when the inlet port (4) is closed and a positive fluid pressure is applied to the chamber (21).

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